

**REMARKS**

Claims 1-19 are all the claims presently pending in the application. Claims 1, 2, and 6 have been amended to more particularly define the invention. Claims 10-19 have been added to claim additional features of the invention.

No new matter is added.

It is noted that the claim amendments are made only for more particularly pointing out the invention, and not for distinguishing the invention over the prior art, narrowing the claims or for any statutory requirements of patentability. Further, Applicant specifically states that no amendment to any claim herein should be construed as a disclaimer of any interest in or right to an equivalent of any element or feature of the amended claim.

Claims 1-6 stand rejected under 35 U.S.C. § 102(b) as being allegedly anticipated by Harada et al. (JP 2000/219530, cited by Applicant in an Information Disclosure Statement filed September 18, 2006).

Claims 7-9 stand rejected under 35 U.S.C. § 103(a) as being allegedly unpatentable over Harada in view of Yamamura et al. (U. S. Patent No. 6,742,363 B1).

The rejections mentioned above are respectfully traversed in the following discussion.

**I. THE CLAIMED INVENTION**

An exemplary aspect of the claimed invention (e.g., as recited in claim 1) is directed to an elongating method of an optical fiber base material, in which, in an elongating process of elongating an optical fiber base material by heating the optical fiber base material in a heating furnace so that a diameter of the optical fiber base material is reduced, before the optical fiber base material having a distorted portion is elongated from an end thereof, **the distorted portion of the optical fiber base material may be corrected by being heated to be softened in the heating furnace such that the distorted portion is corrected by its own weight.**

Conventional methods of elongating an optical fiber base material in a heated furnace have become increasingly important in manufacturing optical fiber base materials with larger outer diameters. However, the conventional method may produce an optical fiber base material having distortion in its end portion and, subsequently, possesses several drawbacks in dealing with this distortion. Where an optical fiber base material has a large outer diameter, a typically implemented glass lathe cannot be used to correct the distortion. In addition, attempting to correct the distortion can cause the optical fiber base material to be in contact with the heater. Also, if a dummy rod is provided in the vicinity of the distorted end portion, a rod break may occur. Finally, certain methods of preventing the rod from breaking cannot be used when elongating an optical fiber base material by a roller (Application at pages 2-3, paragraphs 6-9).

On the other hand, the aforementioned exemplary aspect of the claimed invention may include an elongating method of an optical fiber base material in which **the distorted portion of the optical fiber base material may be corrected by being heated to be softened in the heating furnace such that the distorted portion is corrected by its own weight.** This feature may prevent a dummy rod from breaking under stress during the process. (Application at page 3-4, paragraph 14). Also, this feature may enable the reduction of the temperature needed to operate the process and the size of the heating furnace (Application at page 4, paragraph 15-16). In addition, a smaller outer diameter might be obtained as a result of reduced distortion (Application at page 4, paragraph 15).

## II. THE PRIOR ART REJECTIONS

### A. The Harada Reference

Harada discloses a method of the production of an optical fiber preform. The Examiner alleges Harada anticipates the claimed invention of claims 1-6. **However,** Applicant respectfully submits that Harada fails to teach or suggest the features of the claimed invention.

As disclosed in paragraphs 21 and 22 of the specification as filed, an exemplary aspect of claimed invention, the optical fiber base material having a large outer diameter of 40 mm to 180 mm is heated so that a distorted portion of the optical fiber base material may be softened. As a result, the distorted portion can be corrected **by its own weight**. Specifically, a tool such as a chuck to hold a lower end portion of the optical fiber base material is **not required** during a heating step. Furthermore, it **might not be necessary** to apply any load to the optical fiber base material in order to correct the distorted portion thereof. The advantages that may be included in the claimed invention **are tremendous**.

On the other hand, **Harada is unable to accomplish the potential advantages of the claimed invention**. Harada, as shown in Figure 1, discloses that a lower end portion of the optical fiber base material **1 is held by a chuck 17**, and a spindle 19 is hung on the chuck 17. Specifically, a lower end portion of the optical fiber base material 1 is pulled by a weight of the spindle 19 in order to prevent the optical fiber base material 1 from being distorted due to the heat. In other words, the distorted portion can be corrected **by a weight of the spindle 19**. This feature is **quite different** from the potential advantages which may be included in the claimed invention.

Also, as shown in Figure 2 of the Application, the optical fiber base material **having a distorted portion** is attached to an elongating apparatus. In other words, the claimed invention requires that the optical fiber base material **having a distorted portion** is attached to an elongating apparatus. This is a concept that may be included in the claimed invention. Specifically, as disclosed in paragraph 10 of the specification as filed, the claimed invention may provide an elongating method of an optical fiber base material which can easily correct a distorted portion of the optical fiber base material.

On the other hand, **Harada does not teach this feature and has addresses a different concept than the claimed invention**. In Harada, a lower end portion of the optical fiber base

material is pulled by a weight of the spindle in order to prevent the optical fiber base material from being distorted due to the heat. Specifically, a disclosure of Harada requires that the optical fiber base material **have no distorted portion** while being attached to an elongating apparatus.

Clearly, Harada does not teach “*the distorted portion of the optical fiber base material may be corrected by being heated to be softened in the heating furnace such that the distorted portion is corrected by its own weight*”, as recited, for example, Claim 1 (Application at 3-4, paragraphs 14-16). Harada simply suggests a method of producing an optical fiber preform (Harada at Abstract). **However**, the Harada method **does not teach or suggest** all of the features of the claimed invention.

Therefore, the Examiner is respectfully requested to withdraw this rejection.

#### **B. The Yamamura Reference**

The Examiner alleges that the combination of Harada and Yamamura renders the claimed invention of claims 7-9 unpatentable. **However**, even assuming (arguendo) Harada and Yamamura were combined, Applicant respectfully submits that the resultant combination does not teach or suggest each and every element of the claimed invention.

Yamamura discloses a method of straightening a glass rod for use in making an optical fiber perform (Yamamura at Abstract). The Examiner alleges that Yamamura teaches a laser beam diameter measuring device for detecting the diameter of a glass material so that a uniform diameter fiber can be produced with minimal attenuation characteristics.

**However**, Yamamura **clearly** fails to teach or suggest an elongating method of an optical fiber base material that may include “*the distorted portion of the optical fiber base material may be corrected by being heated to be softened in the heating furnace such that the distorted portion is corrected by its own weight*”, as recited, for example, Claim 1 (Application at 3-4, paragraphs 14-16). This feature may prevent a dummy rod from breaking under stress during the

process. (Application at page 3-4, paragraph 14). Also, this feature may enable the reduction of the temperature needed to operate the process and the size of the heating furnace (Application at page 4, paragraph 15-16). In addition, a smaller outer diameter might be obtained as a result of reduced distortion (Application at page 4, paragraph 15).

Therefore, even assuming (arguendo) Yamamura would have been combined with Harada, **the alleged combination still leaves the deficiencies referenced previously in Section A.** Therefore, the Examiner is respectfully requested to withdraw this rejection.

### III. NEW CLAIMS

New claims have been added to claim an additional feature of the invention and to provide more varied protection for the claimed invention. These claims are independently patentable because of the novel and nonobvious features recited therein.

Applicant submits that new claims are patentable over the cited prior art references at least for analogous reasons to those set forth above with respect to claims.

### IV. FORMAL MATTERS AND CONCLUSION

With respect to the Examiner's objections, the objected claims have been amended in a manner fully responsive to the Examiner's objections.

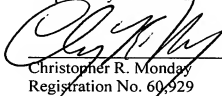
In view of the foregoing, Applicant submits that claims 1-19, all the claims presently pending in the application, are patentably distinct over the prior art of record and are in condition for allowance. The Examiner is respectfully requested to pass the above application to issue at the earliest possible time.

Should the Examiner find the application to be other than in condition for allowance, the Examiner is requested to contact the undersigned at the local telephone number listed below to discuss any other changes deemed necessary in a telephonic or personal interview.

The Commissioner is hereby authorized to charge any deficiency in fees or to credit any overpayment in fees to Attorney's Deposit Account No. 50-0481.

Date: 11/5/2007

Respectfully Submitted,



Christopher R. Monday  
Registration No. 60,929

Sean M. McGinn  
Registration No. 34,386

**McGinn IP Law Group, PLLC**  
8321 Old Courthouse Road, Suite 200  
Vienna, Virginia 22182-3817  
(703) 761-4100  
**Customer No. 21254**